

Issued by NMI Certin B.V.

In accordance with WELMEC 8.8 2017, OIML R 60 (2021), EN 45501:2015, WELMEC 7.2, 2022.

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Germany

Measuring instrument A **single point load cell**, with strain gauges, equipped with electronics, tested as a part of a weighing instrument.

Registered trade name : HBM  
Designation : FIT5X

Further properties are described in the annexes:

- Description TC12603 revision 0;
- Documentation folder TC12603-1.

An overview of performed tests is given in the annex:

- Description TC12603 revision 0.

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Issuing Authority

**NMI Certin B.V.**  
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## 1 General information about the load cell

All properties of the load cell, whether mentioned or not, shall not be in conflict with the standards mentioned in this certificate.

This certificate is the positive result of the applied voluntary, modular approach, for a component of a measuring instrument, as described in WELMEC 8.8. The complete measuring instrument must be covered by relevant metrological certification that is valid in the country where the instrument is put into use.

### 1.1 Essential parts

Number	Pages	Description	Remark
12603/0-01	1	Outline drawing	Mechanical
12603/0-02	6	Electrical drawing	with parts list

EMI protection measures:

- The A/D board is placed within the metal housing of the load cell.

### 1.2 Essential characteristics

Characterization of load cell capabilities	Digital load cell with data processing
Maximum capacity ( $E_{max}$ )	5 kg up to and including 25 kg
Minimum dead load	0 kg
Accuracy Class	C
Maximum number of load cell intervals (n) <sup>(1)</sup>	4000
Ratio of minimum LC Verification interval <sup>(1)</sup> $Y = E_{max} / v_{min}$	10000
Ratio of minimum dead load output return <sup>(1)</sup> $Z = E_{max} / (2 * DR)$	4000
Fraction $p_{LC}$	0,8
Temperature range	-10 °C / + 40 °C
Humidity Class	CH
Safe overload	150 % of $E_{max}$
Recommended excitation	10-30 V DC
Excitation maximum	30 V DC
Transducer material	Stainless steel
Atmospheric protection	Hermetically welded

Electromagnetic environment class	E1
Number of counts for $E_{max}$	$\geq Y * 5 / p_{LC}$
Software identification	Version number: 81, Checksum: 244554

Remark:

1. The characteristics for  $n_{max}$ , Y and Z can be reduced separately.

List of legally relevant functions:

- Linearity compensation: the linearity can be compensated by using a 3<sup>rd</sup> order polynomial curve;
- Digital filter;
- Adjustable sample frequency;
- Determination stability of equilibrium;
- Semi-automatic zero-setting;
- Initial zero-setting;
- Zero-tracking;
- Semi-automatic subtractive tare balancing;
- The software seal uses an event counter that increments, each time any parameter changes or adjustment is made and saved;
- Preset tare;
- Automatic zero-setting.

Software:

- The identification number will be displayed on the device that displays the primary indications;
- The load cell has embedded software (OIML R 76-1 (2006));
- Software specification (WELMEC 7.2):
  - Software type P;
  - Risk Class B;
  - Extension T.

Data transmission:

The load cell is equipped with one of the following protective interfaces that have not to be secured:

- RS422;
- RS485;
- CANopen;
- DeviceNet.

### 1.3 Essential shapes

Number	Pages	Description	Remark
12603/0-01	1	Outline drawing	Mechanical

The descriptive markings plate is secured against removal by sealing or will be destroyed when removed and contains at least the information and markings as described in OIML R 60 (2021) and:

- This certificate number TC12603 (in the countries where it is mandatory);
- The event counter value;
- Producers name or mark.



# Description

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## 2 Seals

The connecting cable of the load cell or the junction box is provided with possibility to seal.

## 3 Conditions for conformity assessment

Each load cell produced is provided with an accompanying document with information about its characteristics.

The compatibility of load cells and indicator is established by the manufacturer by means of the compatibility of modules form, contained in EN45501:2015 clause F.5, at the time of putting into use.

Other parties may use this certificate without the written permission of the producer.

The load cell equipped with electronics must be powered from the power supply of an indicator or terminal. For the weighing instrument the voltage interruptions, short voltage reductions, voltage transients and surges on the power supply lines shall be considered.

The inscriptions contain the actual value of the event counter at the time of conformity assessment.

## 4 Reports

An overview of performed tests is given in the evaluation report ER12603 revision 0.